

**TPF/Darwin
Talk
CS14 Splinter Session**

Contrib

Abstract

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Determining η_{Earth} : The Case for Late M-dwarfs

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The parameter η_{Earth} , the frequency of extrasolar planets with masses similar to Earth, is one of the most crucial parameters for the design and overall costs of a TPF/Darwin-type mission. At the moment the value of η_{Earth} is completely unknown. We discuss the feasibility of searching for extremely low-mass planets orbiting late M-dwarf stars using the currently available method of high-precision radial velocity (RV) measurements. For these low luminosity stars the classical habitable zone is also located very close to the star, precisely where the RV technique is most sensitive. We describe our program at the ESO VLT and its UVES spectrograph to search for terrestrial planets in short-period orbits around a sample of southern M dwarfs. For the targets Barnard's star and Proxima Cen we demonstrate our current detection sensitivity for extremely low-mass (terrestrial) planets.